Ordering number: EN 2575B

Monolithic Digital IC

No. 2575B

SANYO

LB1641

Bidirectional Motor Driver

The LB1641 is a bidirectional motor driver IC. Since it has a 2-input logic circuit and performs the functions of bidirectional driving and braking, it is capable of direct driving 6V, 9V, 12V motors. The output voltage can be varied by using an external zener diode.

Features

- 2-input logic can be used to exercise control of bidirectional driving and braking.
- On-chip elements to absorb dash current of motor
- Input interfaceable to MOS LSI
- Output voltage variable by use of external zener diode

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating	unit
Maximum Supply Voltage	V_{CC}max	18	V
Input Voltage	V_{IN}	−0.3 to V_{CC}	V
Output Current	I_{OUT}	±1.6	A
Allowable Power Dissipation	Pdmax	1.2	W
Operating Temperature	Topr	−25 to +75	°C
Storage Temperature	Tstg	−55 to +125	°C

Allowable Operating Conditions at Ta=25°C

Parameter	Symbol	Rating	unit
Supply Voltage	V_{CC1}	7 to 18	V
	V_{CC2}	5 to 18	V

Electrical Characteristics at Ta=25°C, V_{CC}=12V

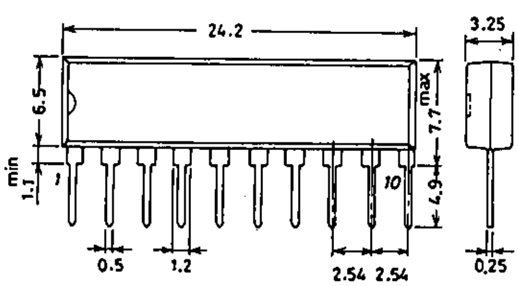
Parameter	Symbol	Conditions	min	typ	max	unit
Input Threshold Voltage	Vth	$R_L=\infty$	1.1	1.3	1.5	V
Minimum Input ON-State Currrent	I_{IN}	$R_L=\infty$		10	15	µA
Output Voltage	V_O	R_L=60ohms, V_Z=7.4V	6.6	7.2	7.4	V
Output Leakage Current	I_{OL}	Pins5,6 GND, $R_L=\infty$		0.01	1.0	mA
Current Dissipation	I_{CC}	Pins5,6 GND, $R_L=\infty$	3	6	10	mA
Saturation Voltage (Upper)	Vsat1	V_{CC}=12V, I_{OUT}=300mA		1.9	2.2	V
	Vsat1	V_{CC}=12V, I_{OUT}=500mA		1.9	2.3	V
Saturation Voltage (Lower)	Vsat2	V_{CC}=12V, I_{OUT}=300mA		0.25	0.5	V
	Vsat2	V_{CC}=12V, I_{OUT}=500mA		0.4	0.65	V

Truth Table

Input		Output		Operation
IN1	IN2	OUT1	OUT2	
0	0	0	0	Braking
1	0	1	0	Forward (reverse) drive
0	1	0	1	Reverse (forward) drive
1	1	0	0	Braking

Input level   1: 2.0V or greater
               0: 0.7V or less

Package Dimensions 3043A
(unit: mm)

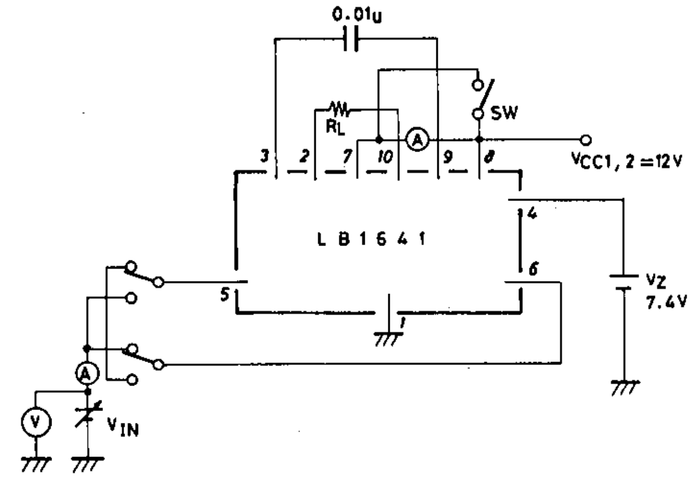


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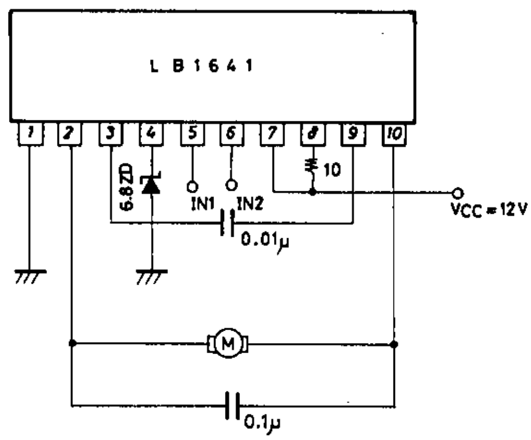
Test Circuit

Unit (capacitance: F)

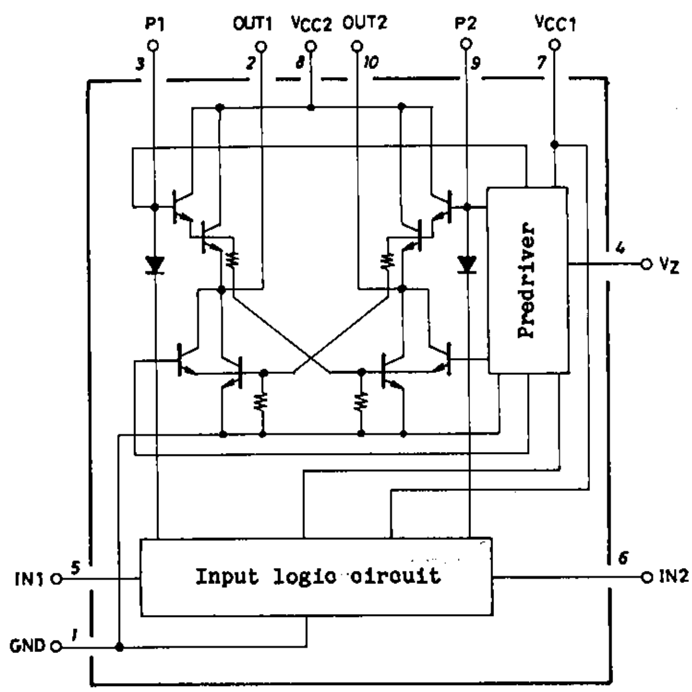


Sample Application Circuit: 6V motor circuit

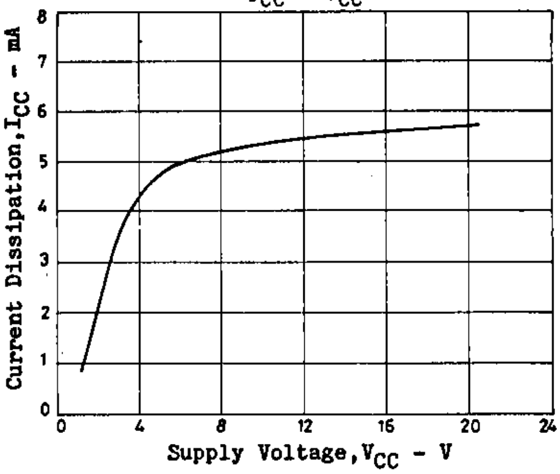
Unit (resistance: Ω, capacitance: F)



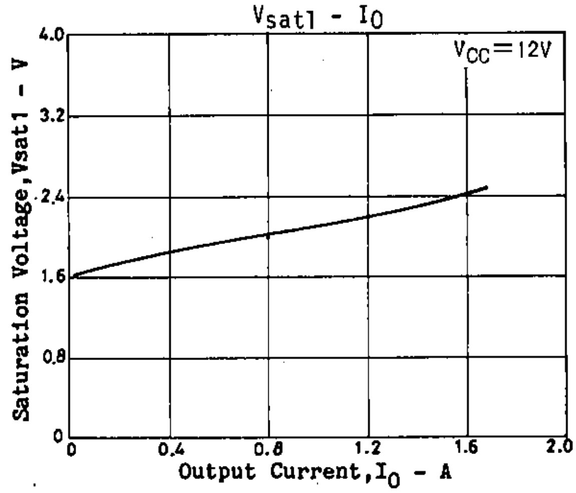
Equivalent Circuit Block Diagram



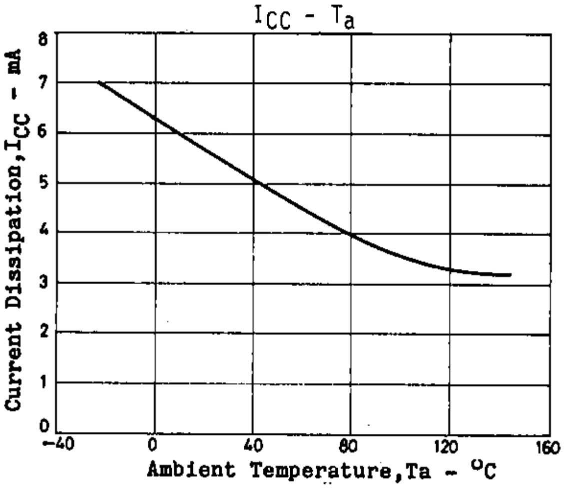
I_{CC} - V_{CC}



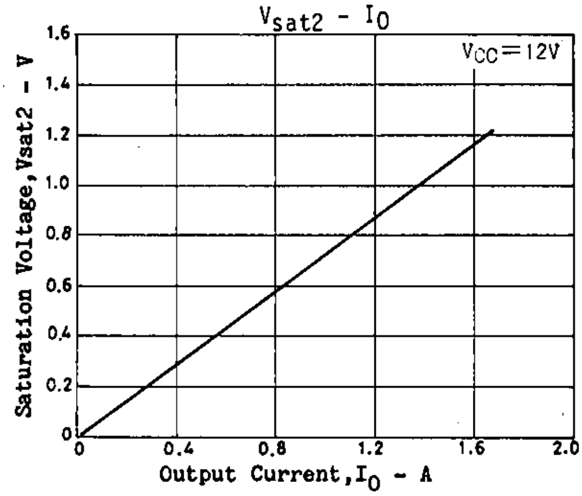
V_{sat1} - I_O



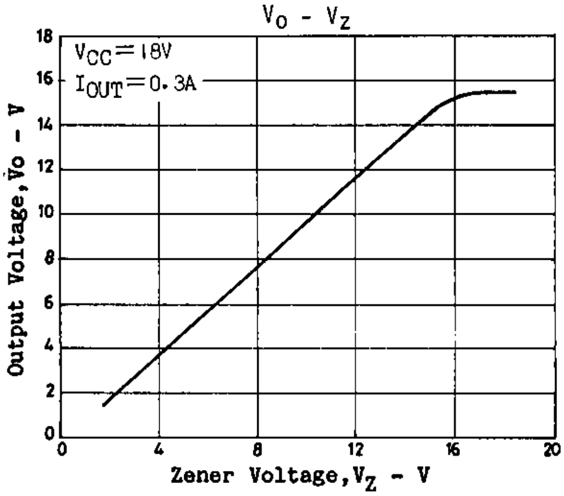
I_{CC} - T_a



V_{sat2} - I_O



V_O - V_Z



P_d max - T_a

